

## PENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>15/W32271W0</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 99/00469</b>	International filing date (day/month/year) <b>15/02/1999</b>	(Earliest) Priority Date (day/month/year) <b>16/02/1998</b>
Applicant <b>UNIVERSITY OF SURREY et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.  **Certain claims were found unsearchable** (See Box I).

3.  **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.

because the applicant failed to suggest a figure.

because this figure better characterizes the invention.

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None of the figures.

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 15/W32271WO	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB99/00469	International filing date (day/month/year) 15/02/1999	Priority date (day/month/year) 16/02/1998
International Patent Classification (IPC) or national classification and IPC H01Q11/08		
Applicant UNIVERSITY OF SURREY et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>		

Date of submission of the demand 16/09/1999	Date of completion of this report 10.12.1999
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer McLean, G Telephone No. +49 89 2399 2608



INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

International application No. PCT/GB99/00469

I. Basis of the report

1. This report has been drawn on the basis of (substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.):

Description, pages:

1-9 as originally filed

Claims, No.:

1-23 as originally filed

Drawings, sheets:

1-4 as originally filed

2. The amendments have resulted in the cancellation of:

the description, pages:  
 the claims, Nos.:  
 the drawings, sheets:

3.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB99/00469

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims 1-23
	No: Claims
Inventive step (IS)	Yes: Claims 1-23
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-23
	No: Claims

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/00469

**Item V**

The following document is introduced into this preliminary examination report:-

D1= WO 97 11507 A (QUALCOMM INC).

Document D1 demonstrates that it is known in the art to associate a multifilar antenna with a weighting circuit to control frequency, polarisation and/or direction of propagation of a received or transmitted signal.

However there is no suggestion in any of the cited prior art that such an antenna may be rendered adaptive by providing control means responsive to detecting means, the former controlling the weighting circuit.

Claims 1-23 are considered to be novel and inventive accordingly.

**Item VII**

Should the application enter the regional phase, the following matters will need attention:-

- (i) those independent claims which are retained should be cast in correct two-part form (Rule 6.3(b)) with respect to D1.
- (ii) reference signs in parentheses should be inserted in the claims [Rule 6.2(b)]. This applies to both the preamble and characterising portion.
- (iii) the opening pages of the description should be brought into line with the new claims [Rule 5.1(a)(iii)].
- (iv) document D1 should be referred to in appropriate terms in the description to comply with Rule 5.1(a)(ii).
- (v) claim 23 is not of allowable form and would need to be deleted.

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## INTERNATIONAL SEARCH REPORT

International Application No

/GB 99/00469

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H01Q11/08 H01Q5/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H01Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 11507 A (QUALCOMM INC) 27 March 1997	1-5, 14, 16, 17, 22, 23
A	see page 2, line 19 - page 4, line 7 ---	6-21
X	US 5 606 332 A (DARDEN IV WILLIAM H ET AL) 25 February 1997	1, 3, 14-18, 23
A	see column 1, line 39 - column 2, line 56 see column 3, line 41 - line 56 ---	2-22
X	US 5 600 341 A (KURBY CHRISTOPHER N ET AL) 4 February 1997	1, 3, 14-18, 23
A	see column 1, line 39 - column 3, line 14 ---	2-22
A	EP 0 767 508 A (NOKIA MOBILE PHONES LTD) 9 April 1997 see column 3, line 43 - column 5, line 5 -----	1-23

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

## ° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

26 May 1999

02/06/1999

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